

Acknowledgments

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Literature Cited

- Galle, F. C. 1967. Native and some introduced azaleas for southern gardens. *American Horticultural Magazine* 46: 13-23.
- Johnson, W. T. & H. H. Lyon. 1988. *Insects That Feed on Trees and Shrubs*. Cornell University Press, Ithaca, New York. 556 pp.
- King, B. L. 1977. The flavonoids of the deciduous *Rhododendron* of North America (Ericaceae). *American Journal of Botany*. 64: 350-360.
- King, B. L. 1980. The systematic implications of flavonoids in *Rhododendron* subgenus *Pentanthera*. pp. 163-185, *In: J. L. Luteyn and M. E. O'Brien (eds.), Contributions Toward a Classification of Rhododendron*. The New York Botanical Garden, Bronx, New York.
- Li, H. 1957. Chromosome studies in the azaleas of eastern North America. *American Journal of Botany* 44: 8-14.
- Wilcox, J. A. 1979. *Leaf Beetle Host Plants In Northeastern North America*. Flora and Fauna Publications, Gainesville, Florida. 30 pp.

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Subcoccinella vigintiquatuorpunktata (L.), First Virginia Record and New North American Host of an Adventive Lady Beetle (Coleoptera: Coccinellidae)

A. G. Wheeler, Jr.
Bureau of Plant Industry
Pennsylvania Department of Agriculture
Harrisburg, Pennsylvania 17110

Subcoccinella vigintiquatuorpunktata (L.) belongs to the phytophagous subfamily Epilachninae of a mainly predacious family, the Coccinellidae or lady beetles. It is widely distributed in the Old World, ranging throughout Britain and continental Europe and occurring in parts of northern Africa, Asia Minor, and the former USSR. The broad host range includes more than 70 plant species, but Caryophyllaceae and Fabaceae are favored; this lady beetle is a pest of alfalfa (*Medicago sativa* L.) in Europe (USDA, 1974; Richards et al., 1976; Ali, 1979). Adults and larvae feed from the abaxial surface of host foliage, cleaning out the lower epidermis and palisade cells. Injured leaves, which have the upper epidermis intact, show a characteristic lacework of transparent, parallel strips. Univoltine in Britain, populations on the European continent are generally bivoltine; the adults overwinter in protected sites near host plants (Marriner, 1927;

Tanasijević, 1958; Richards et al., 1976; Ali, 1979; Wheeler & Henry, 1981; Baldwin, 1988).

This common Palearctic coccinellid was first collected in North America in Pennsylvania in 1972 and New Jersey in 1973 (USDA, 1974). Known unofficially in the United States as the European alfalfa beetle, it has since been recorded from Maryland, Missouri, New York, Ohio, and West Virginia. Populations have been found mainly on bouncing bet (*Saponaria officinalis* L., Caryophyllaceae) along railroad rights-of-way, and rail traffic is believed to have helped disperse the beetle following its apparent accidental introduction with commerce. Larval development has been limited to caryophyllaceous plants: white campion (*Silene latifolia* Poiret = *Lychnis alba*) and wild pink (*S. caroliniana* var. *pennsylvanica* (Michx.) Fern.), in addition to *Saponaria officinalis*. Adult feeding has been observed on tall oatgrass (*Arrhenatherum*

elatius (L.) J. & C. Presl., Poaceae). Nearctic populations are chiefly univoltine (Wheeler & Henry, 1981; Gordon, 1985).

Joint state-federal surveys for this potentially economic insect were discontinued after the mid-1970s when it became apparent that this coccinellid posed no immediate threat to alfalfa. It is desirable, however, to document the habits and further spread of all unintentionally introduced insects, regardless of their applied significance. Such information, even when accumulated during unsystematic surveys, helps in analyzing pathways of introduction and subsequent dispersal of nonindigenous organisms; and it could become crucial if a particular species eventually assumes economic importance. Herein I report Virginia as a new state record for the European alfalfa beetle and fire pink (*Silene virginica* L.) as a new host.

Collection Data and Observations

On 7 May 1993, I discovered *S. vigintiquatuor-punctata* on *S. virginica* growing on a shaly roadcut bank and in dry woods along Seneca Hollow Road (Rt. 821), 2.9 km southwest of Ironto, Montgomery County. One adult (probably an overwintered individual) was collected (deposited in the Virginia Museum of Natural History at Virginia Tech, Blacksburg), and larvae were observed damaging the foliage and stems of several plants. Other plant species characteristic of the habitat were fragrant sumac (*Rhus aromatica* Ait., Anacardiaceae) and New Jersey tea (*Ceanothus americanus*, Rhamnaceae).

During 15–16 May 1993, I returned to the Montgomery Co. site for further observations and attempted to make additional collections of the beetle in nearby areas of southwestern Virginia. Larvae were still present on fire pink along Seneca Hollow Road, and they had severely damaged the basal leaves of several plants; no adults were seen. The characteristic larval injury, which can be considered almost diagnostic for this insect, was observed on fire pink on a shaly slope along Flatwoods Road (Rt. 713) northeast of Ironto, and nearby on white campion growing along the railroad on North Fork Road (Rt. 603). Possible adult feeding was observed in the Ironto area on a few leaves of the legumes yellow sweet clover (*Melilotus officinalis* [L.] Pallas) and red clover (*Trifolium pratense* L.). No beetles or their injury were found on fire pink on Brush Mountain in Montgomery County or on Bald Knob in Franklin County. Surveys for the coccinellid on potential leguminous and Caryophyllaceae hosts were likewise negative along railroads and roadsides at about 10 other sites in Giles, Montgomery,

Pulaski, and Roanoke counties.

I later collected the European alfalfa beetle in west-central Virginia (Nelson Co.). On 28 May 1993, larvae were found on fire pink along the Blue Ridge Parkway near milepost 1 southeast of Waynesboro. Injury was apparent on about 10 plants on a dry bank at the edge of woods. Voucher specimens of larvae have been deposited in the insect collections at Cornell University, Ithaca, New York.

Discussion

The record for Montgomery County, Virginia, extends the range of the European alfalfa beetle about 241 km (150 miles) south of Grafton, West Virginia (see Gordon, 1976 for previous records), and becomes the southernmost U.S. locality known for this adventive species. Populations in the state may be quite limited, occurring mainly along railroads, but extensive surveys are needed to delimit the extent of its current range. If evidence for the beetle's recent arrival with European commerce were not clear-cut, its collection in relatively natural areas—along the Blue Ridge Parkway in Nelson Co. and in Maryland's Green Ridge State Forest in Allegany Co. (23 May 1993)—would suggest an indigenous status in our fauna.

Silene virginica is only the second native plant known to serve as one of the beetle's hosts in the New World. The coccinellid could be considered a beneficial introduction when it damages colonies of the naturalized weed *Saponaria officinalis*, but undesirable when it attacks an attractive wild flower such as fire pink.

In North America, the European alfalfa beetle is not known to have used alfalfa or other legumes as larval hosts (Wheeler & Henry, 1981), but a change in food habits remains possible. Although the coccinellid is polyphagous, using hosts in 12 families (USDA, 1974), European populations often show extreme host specificity. The possibility of a sibling species complex or subspeciation has been suggested, or the beetle could be polymorphic in host preference as well as in elytral color pattern (Tanasijević, 1958; Richards et al., 1976; Wheeler & Henry, 1981). The European alfalfa beetle's continued spread in North America should be monitored, but resolution of some fundamental questions regarding its taxonomic status and ecology is also needed.

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Literature Cited

- Ali, M. 1979. Ecological and Physiological Studies on the Alfalfa Ladybird. Akademiai Kiado, Budapest. 200 pp.
- Baldwin, A. J. 1988. Biological observations on *Subcoccinella vigintiquatuor-punctata* (L.) (Col., Coccinellidae). Entomologist's Monthly Magazine 124: 57-61.
- Gordon, R. D. 1985. The Coccinellidae (Coleoptera) of America north of Mexico. Journal of the New York Entomological Society 93: 1-912.
- Marriner, T. F. 1927. Observations on the life history of *Subcoccinella 24-punctata*. Entomologist's Monthly Magazine 63: 118-122.
- Richards, A. M., R. D. Pope, & V. F. Eastop. 1976. Observations on the biology of *Subcoccinella vigintiquatuor-punctata* (L.) in southern England. Ecological Entomology 1: 201-207.
- Tanasijević, N. 1958. Zur Morphologie und Biologie des Luzernemarienkäfers *Subcoccinella vigintiquatuor-punctata* L. (Coleoptera: Coccinellidae). Beiträge zur Entomologie 8: 23-78.
- U.S. Department of Agriculture. 1974. European alfalfa beetle in the U. S. – 1974. Cooperative Economic Insect Report 24 (36): 731-734.
- Wheeler, A. G., Jr., & T. J. Henry. 1981. Seasonal history and habits of the European alfalfa beetle, *Subcoccinella vigintiquatuor-punctata* (L.) (Coleoptera: Coccinellidae). Coleopterists Bulletin 35: 197-203.

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Virginia Record for an Introduced Palearctic Stilt Bug, *Berytinus minor* (Heteroptera: Berytidae)

Richard L. Hoffman
Virginia Museum of Natural History
Martinsville, Virginia 24112

During the six-week trapping interval of 31 March – 11 May, 1992, a drift fence unit operated by VMNH obtained the first known Virginia specimen of the stilt bug *Berytinus minor* (Herrich-Schäffer). This installation was located at 1190 m ASL on "The Priest", 6.4 km south-east of Montebello in western Nelson County.

Berytinus minor is a common and widespread insect in much of western Europe. The history of its establishment and subsequent spread in North America has been carefully chronicled by A. G. Wheeler (1970, 1979), who suspected that the bug was brought to this continent by passive transport in plant material. The earliest documented specimen was taken in Ontario in 1929, and after a lag period of two decades the species was being

found at many places in New York, New England, and eastern Canada. Wheeler (1970) provided a spot map of the capture sites known to him, indicating southward spread into northern parts of Ohio and New Jersey. Evidence at the time suggested that dispersal was being accomplished by both "natural" and anthropochoric means.

In his supplementary note about this species, Wheeler (1979) recorded his capture of specimens at the Cranberry Glades, Pocahontas Co., West Virginia, extending the known range some 320 km further southward. This region is well-known as a disjunct postglacial refugium for many kinds of plants and animals, so the discovery of *minor* there might suggest natural occurrence except